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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/585,047

Applicant(s)

LUTZ ET AL.

Examiner

JOHN K. KIM

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 6/29/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISD)
Paper No(s)/Mail Date 6/29/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. This Office action is in response to papers filed on 24 October 2008. Amendments made to the claims and Applicant's remarks have been entered and considered.
2. Claims 1-13 are pending and are presented for examination.

Response to Arguments

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. As a result, applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.
4. The examiner's supplementary responses to the arguments are herewith presented respectfully.
5. Drawing Objections
 - The point P and tangent T

"The point P and tangent T are shown in Fig. 5. Fig. 5 shows an arrow designated as $L_M P$ on the point P. The horizontal line shown in Fig. 5, which has not been designated as the tangent T, leads simultaneously through this point P."

Claim 1 refers "defines a point (P), and a tangent (T) can be inscribed into this point (P)" but shown in Fig. 5 is a line instead of a point and designated to (L_M , P or $L_{M1}P$ as not clear to read due to hand-written). Thus, no P and T are shown. It is recommended to amend the drawing to clear which it is pointing to.

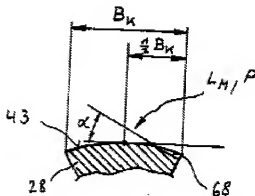


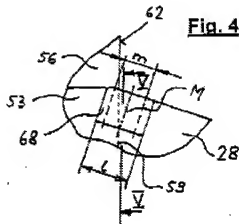
Fig. 5

- Clear definition of where *m* is starting

"Page 9, from line 1 of the specification describes that the chamfer 68 has a center M, which divides this element with regard to the length in the center. The center portion m is arranged symmetrically to the center M. This means that the remaining longitudinal sections on both sides of the center portion m are the same size. The center portion m and the two lateral edge sections therefore form the entire length l of the chamfer 68. The Applicants therefore respectfully submit that the question as to where the center M begins is disclosed and answered."

The question was where the '*m*' starts. "*M*" is a center line of the cut out. As best understood from the answer, any point on the cut out can be a start of '*m*'. Any point can satisfies (1) the center portion *m* is arranged symmetrically to the center *M* and (2) this means that the remaining longitudinal sections on both sides of the center portion *m* are the same size. The specification (page 9, line 1-12) and claims 1 and 3 defines the center portion *m* where the transition plane 59 intersects, but there is no clear definition where *m* is starting. Furthermore, Fig. 4 shows the *m* starts inside the intersection point

of transition plane (59). In claim 1, therefore, major two condition determining the 'm'; one is that the center portion 'm' where the transition plane 59 intersects, and the other is that the center portion 'm' amounts to 8/10 of the length. However, at least shown in Fig. 4 is not correct. Thus, the argument is not persuasive.

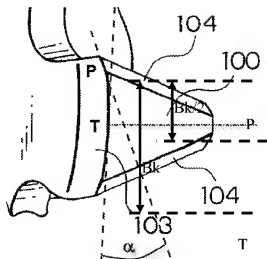


6. Claim 1 Rejection

"... The angle α of 22° is not measured according to the claimed feature of claim 1.

The last feature of claim 1 defines that in the plane perpendicular to the pivot axis 65 between the tangent T and the chamfer 68, an angle of inclination α is formed which has a size of between 15° and 25° . According to this definition, the angle of inclination α essentially lines in a plane which is oriented perpendicular to the pivot axis 65. In this plane, according to this definition, the angle between the tangent T and the chamfer 68 is determined, ..."

From Fig. 7 of Asso, an angle of inclination α , the angle between the tangent T and the chamfer 104, which has a magnitude of between 15° and 25° as the angle 22° degrees is measured by protractor as shown in sketch of Fig. 7 below.



Sketch from Fig. 7 (α is 22 degrees)

7. New Matter

Argument in below is not included in the original disclosure, and not a claimed feature.

"Attached hereto for facilitating the present argument is a representation of a cylindrical body in plane view on the circular surface ("cylinder, front view, View 1"). Also attached is a side view on the same cylinder ("cylinder, side view, View 2"). The left side of this figure shows a point P, which is defined by a diameter line, which intersects the circumference. A tangent T is inscribed by this point P; an angle is formed between the tangent T and its axis S. This angle has the defined value of 45°. By tipping of this spatial object in the side view (see also the same sheet, right side), the angle a appears to be 0°. However, the angle a is clearly defined (see also last feature of claim 1) as an angle of inclination which is in a plane perpendicular to the axis of rotation between the tangent T and the chamfer 68. In this principle sketch ("cylinder, front view, View 1"), like the definition in claim 1, the tangent T and the axis S forms the angle $a = 45^\circ$, whereby this angle $a = 45^\circ$ is disposed in the

plane which is perpendicular to the pivot axis shown in the left of the figure as a point."

Response to Amendment

8. The examiner reviewed amended claims and remarks as follows.

Drawings

9. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Claim 1 refers "defines a point (P), and a tangent (T) can be inscribed into this point (P)" but shown in Fig. 5 is a line instead of a point and designated to (L_M, P or L_MT P as not clear to read due to hand-written). Thus, no P and therefore T are shown.

Claims 1 and 3 refer "wherein the chamfer (68) has a center portion m in an edge direction that intersects a transition plane (59) which demarcates the pole root (53) and the freely projecting part of the claw pole (28, 29), and the center portion m amounts to 8/10 of the length, oriented in the edge direction, ..." but there is no clear definition where m is starting. Furthermore, Fig. 4 shows the m starts inside the intersection point of transition plane (59). See response to argument above.

These items must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being

amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

10. Claim 3 is objected to because of the following informalities:

Claim 3 refers "the chamfer (68) has a center (m)" but the examiner believes it is "the chamfer (68) has a center (M)". The 'm' has been defined for a center portion. Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim recites "2. The claw-pole rotor as defined by claim 1, characterized in that the center portion m amounts to 1/3 of the length (l) of the chamfer (68)." In claim 1 which claim 2 depends to defines "... , and the center portion m amounts to 8/10 of the length,". Hence, under the condition of claim 1, claim 2 condition can not be made.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "... a chamfer (68) extends on the one hand in a circumferential direction and on the other in an edge direction of a claw pole (28 and 29, respectively), ..." The examiner believes any chamfer or cutout at top of claw poles can satisfy above limitation as it is so general and not specific.

Claim 1 recites "... and the center portion m amounts to 8/10 of the length, oriented in the edge direction, of the chamfer (68)." One end is believed to be the point where that intersects a transition plane (59) which demarcates the pole root (53) and the freely projecting part of the claw pole (28). The other end is not described. Therefore, boundary of the center portion m is indefinite.

Claim 1 refers "said this point (P)". But no 'this point (P)' has been mentioned before.

Claim 1 recites "... ; and wherein the claw pole has ..., defines a point (P), and a tangent (T) can be inscribed into this point (P), ". Point P is not definite where it points out. The paragraph is describing that the claw pole has a width oriented in the circumferential direction, on the cylindrical surface. The examiner believes it was intended to describe the chamfer. Appropriate correction is required.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

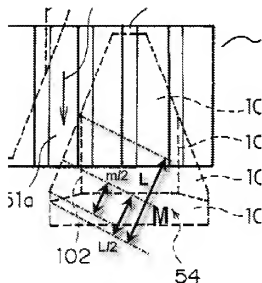
1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

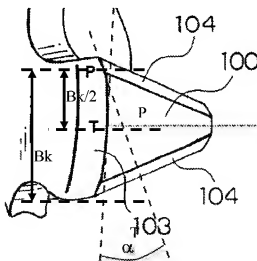
16. Claims 1, 3 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao (US 2002/0021052, IDS).

As for claim 1, Asao shows (in Figs. 1-3 and 13) and discloses a claw-pole rotor for an electrical machine, having two pole wheels (51, 52), which each carry claw poles (53 and 54, respectively), which each originate in a plate region (left front plate in Figs. 6 and 7) and have a pole root (103), and on a circumference of the claw-pole rotor (circumference along 103 and 100 boundary), claw poles (53, 54) of the pole wheels (51, 52) are located in alternation, and located between claw poles interstices (between numeric 53B and 100 in Fig. 6), and a claw pole (53, 54) has a radially outward-oriented cylindrical-jacket like surface (100), by which a pivot axis (axis of 6) is defined, and a chamfer (101) extends on the one hand in a circumferential direction and on the other in an edge direction of a claw pole (53 and 54, respectively), wherein the chamfer (101) has a center portion m in an edge direction that intersects a transition plane (103 and 100 border plane) which demarcates the pole root (103) and the freely projecting part of the claw pole (100), and the center portion m amounts to 8/10 of the length, oriented in the edge direction, of the chamfer (101) (see sketch below); and wherein the claw pole (53, 54) has a width (Bk) oriented in the circumferential direction, and a half width (Bk) on the cylindrical surface (100), in a plane of the claw pole (53, 54) that is

vertical to the pivot axis (axis of shaft 6), defines a point (P), and a tangent (T) can be inscribed into said this point (P) (see sketch below). In above disclosures, Asso is silent to show or disclose an angle of inclination α which has a magnitude of between 15° and 25° is enclosed between the tangent (T) and the chamfer (101) in the plane that is vertical to the said pivot axis. However, Asso further shows (in Fig. 7) an angle of inclination α which has a magnitude of between 15° and 25° (22 degrees measured by protractor for the angle in sketch of Fig. 7 below) is enclosed between the tangent (T) and the chamfer (101) in the plane that is vertical to the said pivot axis. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings for chamfer angle since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).



sketch from Fig. 2

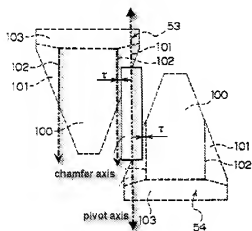


sketch from Fig. 7 (alpha is 22 degrees)

As for claim 3, Asao shows and discloses the claimed invention as applied to claim 1 above. Asao further teaches (in Fig. 2) the chamfer (101) has a center (M) in the edge direction (see sketch above) that is located close to the transition plane (103 and 100 border plane) from the pole root (103) to the freely projecting part of the claw pole (100).

As for claim 8, Asao shows and discloses the claimed invention as applied to claim 1 above. Asao further teaches (in Figs. 1-3) the chamfer (101) is a plane which is oriented parallel to the pivot axis direction (axis of shaft 6). (see sketch below)

FIG. 3



As for claim 9, Asao shows and discloses the claimed invention as applied to claim 1 above. Asao further teaches (in Fig. 5) between the chamfer (110) and the cylindrical-jacketlike surface (100) is a stepped transition.

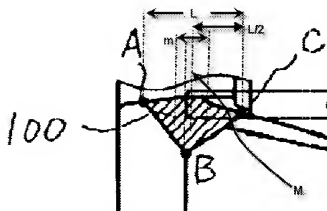
As for claim 10, Asao shows and discloses the claimed invention as applied to claim 1 above. Asao further shows (in Figs. 1-12) and discloses the chamfer (101, 105,

106, 110) is formed integrally. (patentable weight of the product-by-process limitation is negligible in apparatus claim)

As for claim 11, Asao shows and discloses the claimed invention as applied to claim 1 above. Asao further teaches (in Fig. 13) a rotary current generator for motor vehicles [0003], having an annular-cylindrical stator iron (15) and having a claw-pole rotor (7) as applied to claim 1 above. Asao further teaches (in Figs. 7 and 13) the chamfers (103) project beneath the stator iron (15) in such a way that a portion of the chamfers (103) remains outside the stator iron (15).

17. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asao (US 2002/0021052, IDS) in view of Oohashi et al (US 6476535).

Asao shows and discloses the claimed invention as applied to claim 1 above. Asao, however, failed to teach the center portion *m* amounts to 1/3 of the length (l) of the chamfer (68). In the same field of endeavor, Oohashi teaches (in Figs. 3, 7, 9 and sketch below) the center portion *m* amounts to 1/3 of the length of the chamfer (100). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the center portion *m* amounts to 1/3 of the length of the chamfer by combining the teaching of Oohashi with that of Asao, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).



18. Claims 4-5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao (US 2002/0021052, IDS) in view of Armiroli et al (US 6424072).

As for claims 4 and 5, Asao shows and discloses the claimed invention as applied to claim 1 above. Asao, however, failed to teach the chamfer extends up to 5 mm in the pivot axis direction on the freely projecting part of the claw pole. In the same field of endeavor, Armiroli teaches (in Figs. 1 and 6) the chamfer (20) extends up to (L) 2~5 mm in the pivot axis direction on the freely projecting part of the claw pole (18). (col. 4, line 18-20) Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the chamfer extends up to (L) 2~5 mm in the pivot axis direction by combining the teaching of Armiroli with that of Asao, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As for claim 12, Asao shows and discloses the claimed invention as applied to claim 11 above. Asao teaches (in Fig. 13) the chamfer is beneath the stator iron but fails to teach the chamfers project at least 1 mm beneath the stator iron. In the same

field of endeavor, Armiroli teaches (in Figs. 1 and 6) the depth of chamfers being 0.3~2 mm and airgap between stator and rotor. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the chamfers project at least 1 mm beneath the stator iron by combining the teaching of Armiroli with that of Asao, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

19. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asao (US 2002/0021052, IDS) in view of Fudono et al (US 6424072).

Asao shows and discloses the claimed invention as applied to claim 1 above. Asao, however, fails to teach the chamfer (68) has a width (bf) of between 4 mm and 6 mm. In the same field of endeavor, Fudono teaches (in Figs. 1b and 7) a width of between 4 mm and 4.5 mm. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the width of chamfers between 4 mm and 6 mm by combining the teaching of Fudono with that of Asao, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

20. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asao (US 2002/0021052, IDS) in view of Ikeda (US 2002/0096965) and in further view of Fudono et al (US 6424072).

Asao shows and discloses the claimed invention as applied to claim 1 above. Asao, however, fails to teach the chamfer (68) has a length (l) of between 4 mm and 6 mm. In the same field of endeavor, Ikeda shows (in Fig. 19) and discloses about rectangular chamfer (14C), and Fudono discloses (in Figs. 1b and 7) a width of between 4 mm and 4.5 mm. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the chamfer with a length of between 4 mm and 6 mm by combining the teachings of Ikeda and Fudono with that of Asao, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

21. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asao (US 2002/0021052, IDS) in view of Ikeda et al (US 2002/0096965).

Asao shows and discloses the claimed invention as applied to claim 1 above. Asao further teaches (in Fig. 1) the claw-pole rotor (50) is rotated to generate current [0003], and each claw pole (53, 54) has one edge that is oriented in the direction of rotation and one edge that is oriented counter to the direction of rotation. Asao, however, failed to teach the chamfer is formed on the edge that is oriented in the direction of rotation. In the same field of endeavor, Ikeda teaches (in Fig. 19) the

chamfer (14c) is formed on the edge that is oriented in the direction of rotation. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to make the chamfer on a edge in the direction of rotation by combining the teaching of Ikeda with that of Asao to optimize the noise reduction particularly for the designated direction of rotation. [0062]

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN K. KIM whose telephone number is (571)270-

5072. The fax phone number for the examiner where this application or proceeding is assigned is 571-270-6072. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on 571-272-8188.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen P Leung/
Supervisory Patent Examiner, Art Unit 2834

JK